

CORRES CONTROL  
OUTGOING LTR NO

93RF 13680



## EG&G ROCKY FLATS

EG&G ROCKY FLATS, INC

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December 17, 1993



93-RF-13680

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Acting Assistant Manager for Transition  
and Environmental Restoration  
DOE, RFO

Attn R J Schassburger, S R Grace

OPERABLE UNIT 2, INDIVIDUAL HAZARDOUS SUBSTANCE SITE 110 EXPEDITED ACTION -  
NMH-656-93

EG&G Rocky Flats, Inc has been asked to prepare a preliminary assessment of the tasks required for Expedited Action for remediation of contamination at Operable Unit (OU) 2, Individual Hazardous Substance Site (IHSS) 110. The preliminary assessment will be presented to the Environmental Protection Agency (EPA) and the Colorado Department of Health (CDH) at a scoping meeting for the Expedited Action (ERD SRG 12422)

Based on the attached preliminary evaluation, EG&G recommends an observational phased approach that would be conducted under the National Contingency Plan (NCP) § 300 400 Subpart E, Hazardous Substance Response as a non-time critical removal action. Additional guidance is provided in the "Environmental Review Requirements for Removal Actions" Office of Solid Waste and Emergency Response (OSWER) directive 9318 0-05 April, 1987. Under this process, EG&G will perform an engineering evaluation/cost analysis (EE/CA) which is a comparative analysis of removal action options for a Superfund hazardous waste site. The EE/CA process is a requirement by Superfund as modified by the Superfund Amendments and Reauthorization Act (SARA) to develop, evaluate, and select a removal action.

EG&G considered both a time-critical and a non-time critical removal action at IHSS 110. The non-time critical removal action was chosen for the following reasons. The time critical removal action is initiated as a response to release or threat of release that poses a risk to public health or welfare, or the environment. This threat does not exist at this location. Additionally, the time-critical removal action would require immediate excavation and storage of waste material until a remedy is selected by the Feasibility Study process. Sufficient storage space is not currently available at the Rocky Flats Plant to accommodate the volume of waste that would be generated by the removal. Additional hazardous storage space, with appropriate Resource Conservation and Recovery Act (RCRA) permits would have to be obtained prior to beginning the removal action.

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WILSON, J.M.		
ZANE, J.O.		
NEAV	✓	
ANDERSON, G.M.	✓	
LAURIN	✓	
KLEIN	✓	
TRIMMSE	✓	

ADMIN RECORD CENTER (X)	X	X
CORRES CONTROL	X	X

CLASSIFICATION	
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UNCLASSIFIED	X
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SECRET	

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SIGNATURE

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IN REPLY TO REF CC NO:  
4903RF93

ACTION ITEM STATUS  
☐ OPEN ☒ CLOSED  
☐ PARTIAL

LTR APPROVALS  
GMA  
ORIG & TYPIST INITIALS  
MDX:jm

RF-46469 (Rev 4/92)

ADMIN RECORD

BZ-A-00083

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The non-time-critical approach is recommend as the removal action approach because of the stability of the non-aqueous phase liquid (NAPL) source in the subsurface and that the potential for public exposure to the NAPL material is minimal. Initiation of the non-time-critical approach satisfies the following four goals:

- Provides a methodology for evaluating and selecting an alternative technology for waste disposition to ensure that the technology is sound and appropriate for the specific site
- Provides for adequate public participation in the process for selecting a removal alternative.
- Provides improved documentation for removal action selection to facilitate cost recovery efforts
- Provides better documentation of the decision-making process for removal actions for inclusion in the administrative record

The attachment includes an assessment of the potential tasks necessary to perform the non-time critical removal action. Funding and scheduling alternatives, including prioritizing EG&G environmental activities, will be addressed after approval of EG&G's recommended approach.

If you have any questions or require further information, please call me or Michael D Klein of Environmental Engineering and Technology at 966-6950

  
Ned M Hutchins, Acting  
Associate General Manager  
Environmental Restoration Management  
EG&G Rocky Flats, Inc

MDK jlm

Orig and 1 cc - M H McBride

Attachment  
As Stated

cc  
A H Pauole - DOE, RFO  
M N Silverman - " "

ASSESSMENT OF TASKS REQUIRED  
FOR REMOVAL OF SUBSURFACE CONTAMINATION  
AT OPERABLE UNIT NO 2,  
INDIVIDUAL HAZARDOUS SUBSTANCE SITE 110 (IHSS 110)

The subsurface contamination to be remediated is the non-aqueous phase liquid (NAPL) material and soils saturated with the NAPL located in the east end of IHSS 110. This NAPL material was detected at two locations within the IHSS, Soil Boring B10191 in December 1991 during the Phase II remedial investigation and soil boring B24793 in August 1993 during construction of the soil vapor extraction pilot plant. Additional subsurface investigation in the form of a soil vapor survey has also been performed in support of the SVE pilot plant construction. The attached map illustrates the location of the soil borings that encountered the NAPL, and a soil gas concentration contour map of total volatile organic compounds detected.

The scope of the requested expedited removal action is to remediate the NAPL in the IHSS to prevent further contamination by the NAPL to the groundwater at OU 2. A list of tasks that shall be addressed and agreed upon by EG&G, DOE, EPA and CDH to accomplish the expedited removal action are as follows:

Scope, Schedule and Budget

- Regulatory basis for the removal action
- Agreement on the scope, schedule and budget
- Identification of funding requirements for fiscal year 1994 (FY 94)
- Development and approval of work package
- Procurement of outside subcontractor support to EG&G

Planning and Identification of Data Needs

- Evaluate currently available data and identify additional data requirements
  - Nature and extent
  - Volume to be removed and treated
  - Soil treatment technologies and requirements for treatability work
  - Cleanup goals
- Requirements and types of characterization for defining the nature and extent of the NAPL at IHSS 110
  - Soil borings
  - Soil gas survey
  - Magnetometer survey
  - Ground penetrating radar
- Acquire bulk samples for soils treatment treatability work
- Evaluate data and report to DOE/RFO the proposed volume to be treated by either *in-situ* or *ex-situ* methods
- Evaluate soil treatment technologies and perform alternative assessment, Perform technical and alternatives assessments
- Evaluate delisting of soils as a hazardous waste after treatment
- Determine air emissions controls
- Determine water management issues

#### Alternative Assessment

- Determine data to be utilized in the alternative assessment
- Evaluate levels of contamination detected during characterization of the nature and extent phase
- Estimate volume of soil to be excavated, stored, and treated
- Determine physical soil characteristics
- Determine contamination types (soil, groundwater, scrap metal, etc )
- Perform technology review
- Develop and gain approval for cleanup goals utilizing Applicable Relevant and Appropriate Requirements (ARARs) or a risk-based approach
- Exaction and interpretation of the treatability studies
- Evaluate and select appropriate remedial technologies
- Develop alternatives for NAPL removal at IHSS 110
- Prepare cost estimates for the expedited removal action
- Establish material handling and storage requirements for crushed drums, bulk soils and drummed materials, including review of the regulatory requirements
- Recommend preferred alternative to perform the expedited removal action

#### Approval of Recommended Alternative

- DOE/RFO approval
- EPA and CDH approval
- Public approval as necessary

#### Soil Removal and Treatment Design

- Procure design subcontractor
- Prepare basis and requirements of the design
- Develop process and instrument diagram
- Develop major equipment list
- Develop design package
- Develop Integrated Work Control Package (IWCP)
- Modify RCRA Part B Permit Application and Approval
- Develop construction drawings
- Develop equipment and bidding specification
- Prepare Health and Safety requirements

#### Construction

- Implement design

#### IHSS Closure and Institutional Controls

- Implement access site controls

#### Observational Approach

An observational phased approach has been preliminarily evaluated. This approach would allow for excavation and storage of contaminated soils based on current knowledge of the IHSS and available technologies. This observational phased approach would allow for excavation and storage of materials as a hazardous waste, and as mixed waste as applicable. Treatment of the excavated soils would occur at a later date. The observational phased approach would occur in three steps.

- Step 1 Excavation in two 10' X10' X 12' deep areas in which NAPL was detected
- Step 2 Excavation of a larger area approximated by the trench boundaries, delineated by ground penetrating radar prior to installation of borings and wells for the Subsurface Interim Measure/Interim Remedial Action Further removal actions will be based on the schedule, resources and budgets associated with Step 1
- Step 3 Excavation of a larger area as approximated by the soil gas survey

The phased approach would allow for rapid removal of known areas of NAPL contamination Several issues (technical and budgetary) exist

- Additional storage space for excavated material will have to be established
- Management issues dealing with an open excavation will have to be addressed
- Undefined contamination cleanup levels
- Limited knowledge as to the nature and extent of the NAPL contamination
- Currently inadequate on-site storage capacity, such that if material were excavated, there would be no legal on-site storage
- Air emission control during the excavation
- Health and safety concerns

The first two bulleted items do not allow for proper planning with respect to scope, schedule and budget The last three items are administrative in nature With proper planning, engineering controls and extensive cooperation with EPA and CDH, they could be overcome

Preliminary calculations for soil excavation and storage requirements for the proposed 3 step program have been performed A summary of these calculations follow

**SCOPE** Removal of Non-Aqueous Phase Liquids (NAPLs) and soils containing NAPLs at Trench T-3, Individual Hazardous Substance Site (IHSS) 110, Operable Unit Two (OU-2)

**OPTIONS**•  
1 Localized removal of areas of known NAPL contamination  
2 Excavation of Trench T-3 area  
3 Excavation of soil gas contamination plume as delineated by the available Soil Gas Survey (SGS) data

#### **DISCUSSION**•

##### **Step1. Localized removal of known NAPL contamination**

*Background* Currently, there are two verified locations of NAPL material at IHSS 110 In December of 1991, NAPL material was encountered during the Remedial Investigation (RI) data collection, at Borehole B10191 Similarly, during the implementation of the Soil Vapor Extraction (SVE) Pilot Testing Program in August of 1993, NAPLs were encountered at Borehole B24793 This option addresses the localized removal of NAPLs at these two locations

*Assumptions* 1 Excavation is limited to these two locations  
2 The excavation will not exceed 15 feet in depth

**Step 3: Excavation of Contamination Plume.**

*Background* A Soil Gas Survey (SGS), conducted in June 1993, measured a VOC contamination plume at IHSS 110

- Assumptions*
- 1 Excavation shall encompass the plume to a 50 microgram/liter total VOC contamination front
  - 2 Bulk dimensions of the total VOC soil gas plume, as determined from SGS data, is 60'X150'
  - 3 The excavation will not exceed 10 feet in depth
  - 4 Surficial soils, and soils to 4 foot depth, is assumed to be non-contaminated and shall be segregated and managed separately from the NAPL material
  - 5 Access to the excavation shall be restricted, negating the requirement for an engineered slope
  - 6 The full depth of the excavation shall be achieved without the need to bench excavation equipment
  - 7 Layback of the trench shall be 1 5 1 for slope stability
  - 8 Soil expansion shall not exceed 40%
  - 9 Ten percent of the lower trench volume is occupied by solid debris

**WASTE VOLUMES GENERATED FOR STEP 3.**

Highly contaminated soils (saturated with NAPL)	126 cubic yards
Low contaminated soils	4527 cubic yards
Contaminated solid debris	10 cubic yards
Spoils	1750 cubic yards

- 3 The excavation footprint, as determined by the limit of bucket travel of the backhoe, is estimated to be 10' by 10'
- 4 The excavation footprint will capture the extent of the NAPL material
- 5 Surficial soils, and soils to 4 foot depth, are assumed to be non-contaminated and shall be segregated and managed separately from the soils containing NAPL's
- 6 Access to the excavation shall be restricted, negating the requirement for an engineered slope
- 7 The full depth of the excavation shall be achieved without the need to bench excavation equipment
- 8 Layback of the trench shall be 1 5 1 for slope stability
- 9 Soil expansion shall not exceed 40%
- 10 Ten percent of the lower trench volume is occupied by solid debris

**WASTE VOLUMES GENERATED FOR STEP 1.**

Highly contaminated soils (saturated with NAPL)	103	cubic yards
Low contaminated soils	42	cubic yards
Contaminated solid debris	8	cubic yards
Excavation Spoils	1050	cubic yards

**Step 2· Excavation of IHSS 110.**

*Background* Historical data indicates IHSS 110 as a 10'X10'X90' disposal trench. A Soil Gas Survey (SGS), conducted in June 1993, indicated VOC contamination to be limited to 45 linear feet of the disposal trench.

- Assumptions*
- 1 Based on SGS data, linear extent of excavation shall be 45'
  - 2 The excavation will not exceed 10 feet in depth
  - 3 Subsurface soils, and soils to 4 foot depth, is assumed to be non-contaminated and shall be segregated and managed separately from the NAPL material
  - 4 Access to the excavation shall be restricted, negating the requirement for an engineered slope
  - 5 The full depth of the excavation shall be achieved without the need to bench excavation equipment
  - 6 Layback of the trench shall be 1 5 1 for slope stability
  - 7 Soil expansion shall not exceed 40%
  - 8 Ten percent of the lower trench volume is occupied by solid debris

**WASTE VOLUMES GENERATED FOR STEP 2.**

Highly contaminated soils	126	cubic yards
Low contaminated soils	93	cubic yards
Contaminated solid debris	10	cubic yards
Spoils	544	cubic yards